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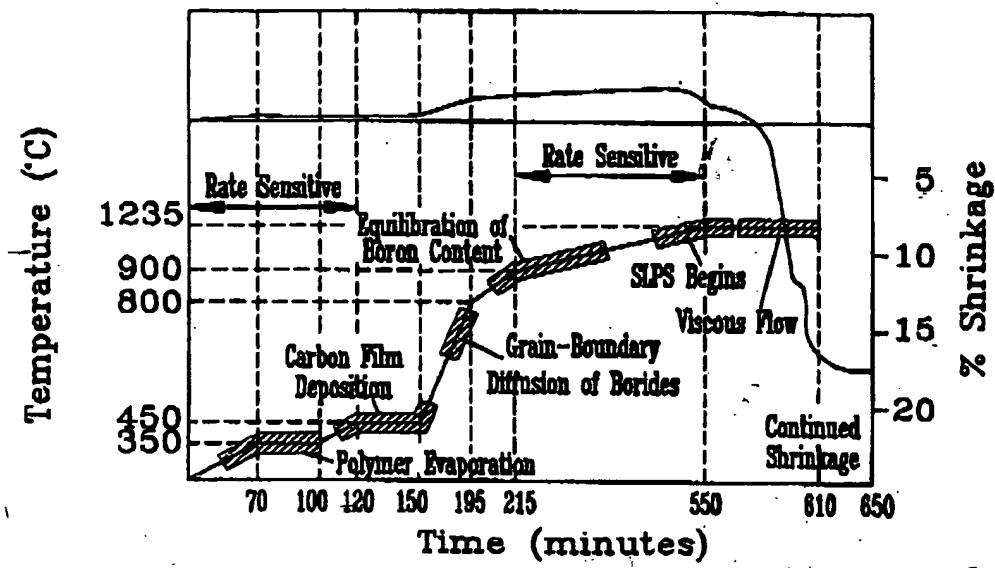
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PRIOR ART
FIG 1

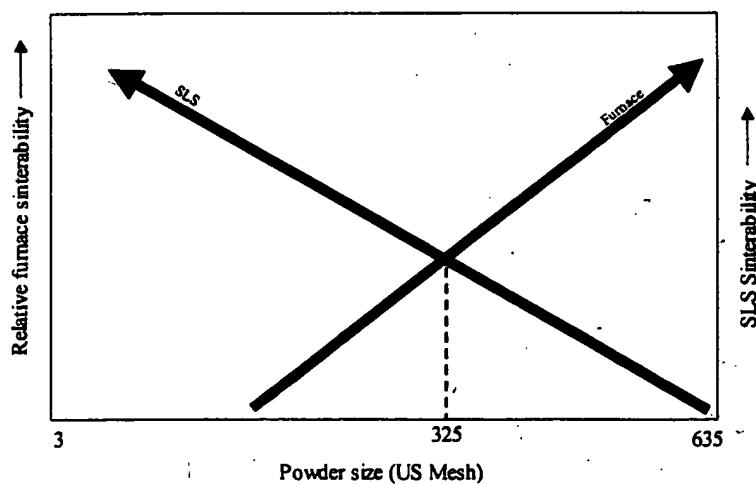


Figure 2 Powder size vs SLS and furnace sinterability

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	Metal powder size distribution		Metal and binder powders blend			
	Total wt %	Size micron	Non Borided wt %	Borided wt %	Nylon 12 wt %	BMI wt %
Original	55 45	-88 to +44 -44	90	10	3	0.5
New	100	-44	85	15	0.5	0.5

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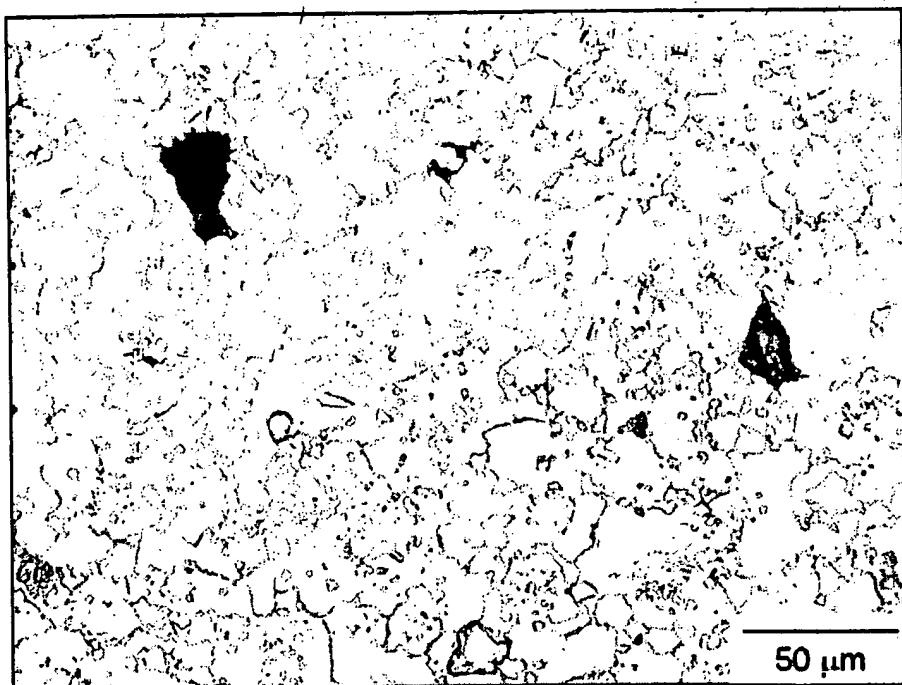


Figure 4 Sample 215-3, 6th sintering run, sintering temperature 2255°F,
etched, optical, bright field image, ~400x

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Parameters/Trial		6
Material (%-% by wt.)		Alloy230+B (85-15)
Binder (% by wt.)		0.5% N-12
BMI (% by wt.)		0.5% BMI
Powder Distribution (μm)		-44
Debind Cycle		
Ramp Rate ($^{\circ}\text{F}/\text{min}$)		2
Hold Temp ($^{\circ}\text{F}$)		1652
Hold Time (min)		15
Pressure (torr)		700
Gas		Ar
Sinter Cycle		
Ramp Rate ($^{\circ}\text{F}/\text{min}$)		1
Hold Temp ($^{\circ}\text{F}$)		2255
Hold Time (min)		10
Pressure (torr)		300
Gas		5%H ₂ -95%Ar

Fig 6

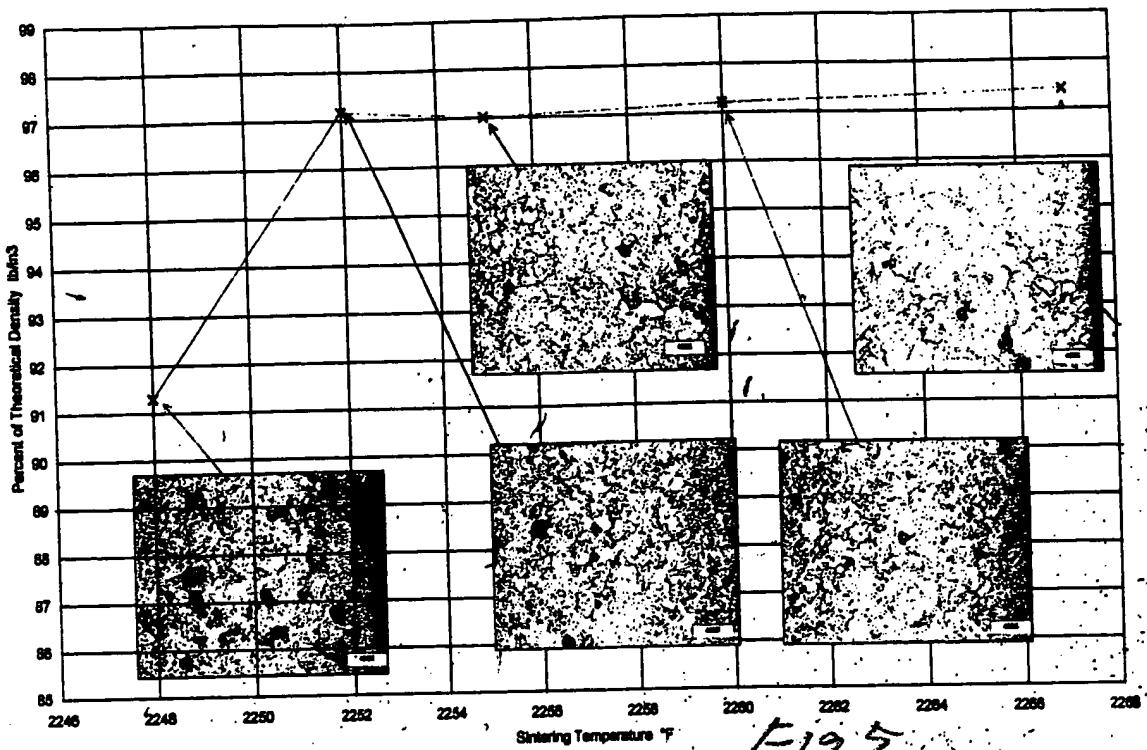
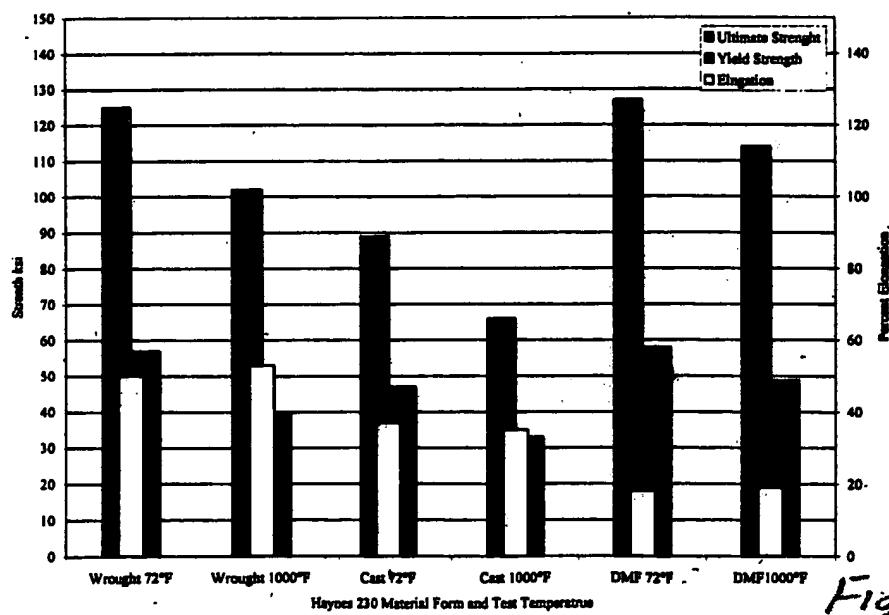


Figure 5 Plot of sintering temperature vs. density and resulting microstructures



Comparison of DMF Alloy 230, cast and wrought Haynes 230 properties